



All Natural Sunscreen Lotion

Cross Reference to Related Applications (none)

Statement Regarding Fed sponsored R & D (none)

Field of the Invention

The invention relates to compositions, which provide dual protection for the human skin against the damaging effects of UVA and UVB radiation. The protection encompasses: 1) UV reflection by mineral pigments and 2) cell protection by scavenging of UV induced unstable free radicals. In particular, the invention relates to **all natural**, absolutely **chemical free** products, which act synergistically as an effective UVB / UVA reflector (Mineral Pigments), UVA absorber and superior free radical trap [(Melanin)] (Bio-Melanin) and cell protector against [erithema] erythema and inflammation (Green Tea) in such compositions.

Background of the Invention

The skin is the most [environmentally-stressed] environmentally stressed organ in human beings. Not only is the skin subjected to toxic chemicals and hostile environments, but it also is the only organ directly exposed to ultraviolet "UV" light in the presence of oxygen.

It has now been well established that long-term exposure to the sun increases the risk of a number of undesirable skin conditions. Not only has solar radiation been implicated as a causative agent of a number of skin cancers. It has also been shown to accelerate the aging process.

While it seems well established, that excessive sun exposure will produce serious skin damage and increase the risk for certain skin cancers. The effects of overexposure to the sun, resulting specifically from UV radiation, i.e. short-term effects from UVB radiation, such as [erithema] erythema (sunburn), to long-term

effects from [UVB] UVA radiation causing premature aging and skin cancer.

On the other hand, it is known that we need some minimum amount of sunlight to maintain good health and a positive mental state. Sunlight produces Vitamin D in the skin, which is absolutely necessary for the efficient absorption of Calcium and Phosphate for strong bone reformation. Most of this is obtained primarily through synthesis by UVB radiation in the skin.

Summary of the Invention

The present invention relates to a sunscreen composition comprising as its active components, in synergistically effective amounts, 1) **Bio-** (biological) **Melanin [Extract]** 2) **Green Tea Extract** from the tea plant *Camellia Oleifera* or *Camellia Sinensis* with Polyphenol contents of greater than 40%, and 3) **Titanium Dioxide** in the amount of 2% - 10% and/or **Zinc Oxide**. It has been found that when adding [(Bio)] **Bio-Melanin [Extract]** and Green Tea Extract, in relative small quantities, to a traditional sunscreen (**Titanium Dioxide and/or Zinc Oxide only**), the combination modestly boosts the SPF by about 3 units but provides unexpectedly high UVA protection. The content of about 1% of **Bio-Melanin** leads to an unexpected UVA protection, i.e. Phototoxic Protection Factor (PPF) of about 6 and will generate a pleasant immediate tan (immediate pigment darkening).

Detailed Description of the Invention

All ingredients of the present composition are **All Natural** and **Non-Chemical** in that they are found in naturally occurring material and are routinely prepared from such materials or are readily purchased from commercial sources. For example, [(Bio)] **Bio-Melanin** is found in a number of different plants and fish extracts. It is found in the fruits of the date palm (phytomelanin) and the common cuttle fish (eumelanin).

A description of the methods for the preparation of the **Bio-Melanin [Extract]** is

available from Mel-Co®.

For the purpose of this invention, it is important that the composition contains typically 1% of **Bio-Melanin** to achieve the desired UVA protection. It is known that **Green Tea** is high in polyphenolic antioxidants, which are effective in reducing erythema response both to UVA and UVB radiation.

For the purpose of this invention, it is important that the polyphenols content of the Green Tea Extracts should be 40%, more preferably at 50% and more. The effective amount of Titanium Dioxide or Zinc Oxide, the particles in a non-surface treated form (no aluminium stearate, no aluminium hydroxide and no silica) in order to keep the formula **All Natural** and **Chemical Free**. The effective amount of TiO₂ and ZnO should preferably not exceed 8% by weight in order to control the whitening effect. Adding Green Tea and Bio-Melanin increases the SPF by about 3 [2 to 4] units. With the combination of this invention, an SPF of 18 to 20 can be achieved using only natural ingredients.

Titanium Dioxide and Zinc Oxide are widely known as powerful (physical) UV reflectors in the UVB spectrum but are less efficient in the UVA area. Short-wave solar rays (UVB) are more potent in producing sunburn and are considered the main cause of basal and squamous cell carcinomas.

The long-wave solar rays (UVA) penetrate the skin more deeply and are considered the chief culprit behind wrinkling, leathery and other aspects of photoaging. The latest studies show that UVA not only increases UVB's cancer causing effects, but also may directly cause some skin cancers, including melanomas.

It is the main purpose of this invention to provide a solution to boost the protection against the damaging [of] UVA radiation in an **All Natural** way besides maintaining the high level of protection against UVB rays.

Adding only 1% of [(Bio)] Bio-Melanin leads to an unsurpassed UVA protection of about 6 PPF (Phototoxic Protection Factor) and a pleasant immediate

tan, i.e. acceleration of the body's own melanin production.

It is the purpose of this invention to demonstrate that it is more beneficial to the human body to topically apply such an All Natural sunscreen formula with an SPF 18 and a 95% UVB protection than go higher with adding chemical ingredients and reaching only [3%] 2% more for an SPF 30. Recent in vitro and in vivo studies show the growing concern regarding side effects (skin cancer, strong estrogenic activity) caused by chemical ingredients in sunscreen products. The following illustrates a sunscreen formulation comprised of the components of the invention.